

WHAT IS CLAIMED IS:

1. A method for cutting metal, comprising:
heating a metal locally to a molten state;
removing the molten metal from the local area using
pressurized gas;

5 directing the molten metal away from the operator,
but on the same side of the metal to which heat was
first applied;

adjusting at least one of the position and strength
of the heat source with relation to the molten metal
10 so the molten metal flows out of the local area making
a cut; and

moving the cutting torch in a direction generally
parallel to a desired cut line to expand the cut line.

2. A method for cutting metal according to claim
1, wherein a cutting trench is created when the molten
metal is removed from the area.

3. A method for cutting metal according to claim
1, wherein adjusting the position and strength of the
heat source comprises varying the distance from the
cutting tip to the metal and the flow rate of the
5 oxygen.

4. A method for cutting metal according to claim
1, wherein heating a metal locally to a molten state
comprises making the metal almost molten, adding
additional pressurized gas causing the metal to become
5 molten.

5. A method for cutting metal, comprising:
heating metal locally to a molten state by holding
a cutting torch generally perpendicular to the surface
where the cutting torch has a two-part tip which
5 releases both a combustible gas and a combustion
enhancing gas and generally in the same direction and
has a control means for gradually changing gas
pressures;

directing the gases at the molten metal at an angle
10 of incidence (α_i) with a horizontal plane of the
molten metal of at least about 45 degrees and
increasing the flow rate of the combustion enhancing
gas thereby removing the molten metal from the local
area creating a cutting trench;

15 maintaining an angle of incidence (α_i) of at least
about 45 degrees to remove the molten metal from the
cutting trench so that the molten metal exits the
cutting trench in the same direction as the angle of
reflection (α_r) away from the operator, but on the
20 same side of the plane of the metal on which the
cutting torch is located;

moving the cutting torch in a direction generally
parallel to a desired cut line to expand the cut line;
and

25 varying at least one of the distance from the
cutting tip to the metal and the flow rate of the
oxygen so as to provide heat making a cut.

6. A method for cutting metal according to claim
5, wherein air said control means for gradually
increasing gas pressure comprises an easy-on air
lance.

7. A method for cutting metal according to claim
5, wherein the combustible gas is propane and it is
adjusted between about 35 to 80 psi.

8. A method for cutting metal according to claim
5, wherein the combustible gas is chemtane and it is
adjusted between about 35 to 80 psi.

9. A method for cutting metal according to claim
5, wherein the combustion enhancing gas is oxygen and
it is adjusted between about 150 and 220 psi.

10. A method for cutting metal according to claim
5, wherein the combustion enhancing gas is a dual
liquid oxygen source.

11. A method for cutting metal from ships,
comprising:

heating metal locally to a molten state by holding
a cutting torch generally perpendicular to the
5 surface, where the cutting torch with control means
has a two-part tip which releases both a combustible
gas and a combustion enhancing gas in the same general
direction, with the combustible gas adjusted between
about 35 to 80 psi and oxygen adjusted between about
10 150 and 220 psi;

directing the gases at the molten metal at an angle
of incidence (α_i) with a plane of the molten steel of
at least about 45 degrees and increasing the flow rate
of the combustion enhancing gas, thereby removing the
15 molten metal from the local area creating a cutting
trench;

maintaining an angle of incidence (α_i) of at least
45 degrees to remove the molten metal from the cutting
trench so that the molten metal exits the cutting
20 trench in the same direction as the angle of
reflection away (α_r) from the operator, but on the
same side of the plane of the metal on which the
cutting torch is located;

moving the cutting torch in a direction generally
25 parallel to a desired cut line to expand the cut line;
and

varying the distance from the cutting tip to the
metal and the flow rate of the oxygen so as to provide
heat making a cut.

12. A method for cutting metal according to claim
11, wherein the control means is an easy-on air lance.

13. A method for cutting metal according to claim
11, wherein the two-part tip is size No. 6 through No.
10 cutting tip.

14. A method for cutting steel from ships
comprising:

heating steel locally to a molten state by holding
a cutting torch generally perpendicular to the surface
5 where the cutting torch is a propane-oxygen cutting
torch having a two-part No.8 Propane straight tip
which releases both propane and oxygen in the same
general direction, with the propane adjusted to about
60 psi and oxygen adjusted to about 200 psi, and
10 having an easy-on air lance;

directing the propane-oxygen gases at the molten
steel at an angle of incidence (α_i) with a plane of
the molten steel of at least about 45 degrees and
increasing the flow rate of the oxygen thereby
15 removing the molten steel from the local area creating
a cutting trench;

maintaining an angle of incidence (α_i) of at least
about 45 degrees to remove the molten steel from the
cutting trench so that the molten steel exits the
20 cutting trench in the same direction as the angle of
reflection (α_r) away from the operator but on the same
side of the plane of the steel on which the cutting
torch is located;

moving the cutting torch in a direction generally
25 parallel to a desired cut line to expand the cut line;

varying the distance from the cutting tip to the
steel and the flow rate of the oxygen so as to provide
heat making a cut.